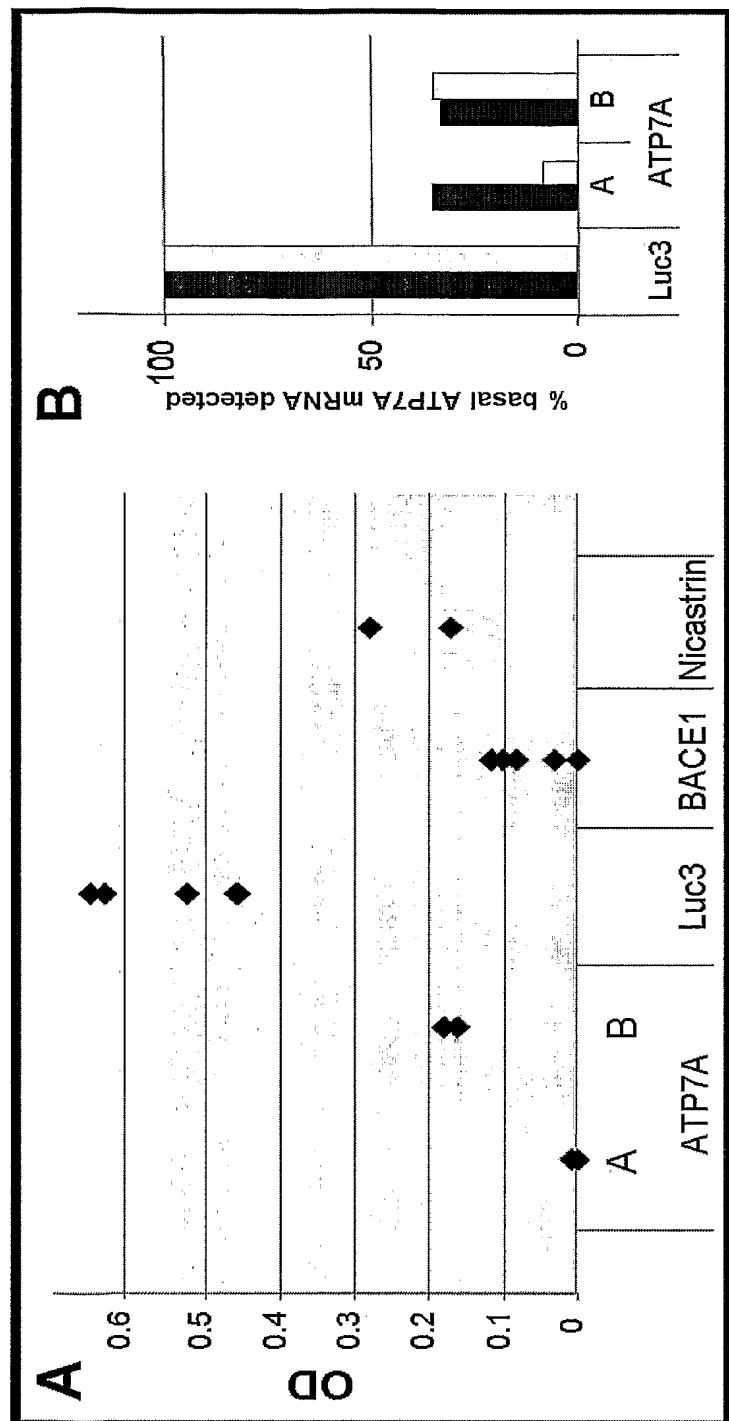


**Figure 1:**

**Figure 2:**

MRKLSIRKRD NNLLKPSSAS SLGIAVSLGR PVLSRSSSGT VNLLEEVGLH  
IRD TAFSSTK LLEAISTVSA QVEELAVHNE CYDPSMGVNS VTISVEGMTC  
NSCVWTIEQQ IGVNNGVHHI KVSLEEKNAT IIYDPKLQTP KTLQEAIIDM  
GFD AVIHNPD PLPVLTDTLF LTVTASLTLP WDHIQSTLLK TKGVTDIKIY  
PQKRTVAVTI IPSIVNANQI KELVPELSDL TGTLKKSGA CEDHSMAQAG  
EVVLKMKVEG MTCHSCTSTI EGKIGKLQGV QRIKVSLDNQ EATIVYQPHL  
ISVEEMKKQI EAMGFPAFVK KQPKYLKLGA IDVERLKNTP VKSSEGSQQR  
SPSYTNSTA TFIIDGMHCK SCVSNIESTL SALQYVSSIV VSLENRSAIV  
KYNASSVTPE SLRKAIEAVS PGLYRVSITS EVESTNSPS SSSLQKIPLN  
VVSQPLTQET VINIDGMTCN SCVQSIEGVI SKKPGVKSIR VSLANSNGTV  
EYDPLLTSPE TLRGAIEDMG FDATLSDTNE PLVVIAQPSS EMPLLTSTNE  
FYTKGMTPVQ DKEEGKNSSK CYIQVTGMTC ASCVANIERN LRREEGIYSI  
LVALMAGKAE VRYNPAPIQP PMIAEFIREL GFGATVIENA DEGDGVLELV  
VRGMTCAASCV HKISSLTKH RGILYCSVAL ATNKAHIKYD PEIIGPRDII  
HTIESLGFEA SLVKKDRSAS HLDHKREIRQ WRRSFLVSLF FCIPVMGLMT  
YMMVMDHHFA TLHHNQNMSK EEMINLHSSM FLERQILPGL SVMNLLSFLL  
CPVQFFGGW YFYIQAYKAL KHKTANMDVL IVLATTIAFA YSLIILLVAM  
YERAKVNPIF FFDTPPMLFV FIALGRWLEH IAKGKTSEAL AKLISLQATE  
ATIVTLDSDN ILLSEEQVDV ELVQRGDIK VVPGGKFPWD GRVIEGHSMV  
DESLITGEAM PVAKKPGSTV IAGSINQNGS LLICATHVGA DTTLSQIVKL  
VEEAQTSKAP IQQFADKLSG YFVPFIVFVS IATLLWIVI GFLNFEIVET  
YFPGYNRSS RTETIIRFAF QASITVLCIA CPCSLGLATP TAVMVGTGVG  
AQNGILIKGG EPLEMAHKVK VVVF DKTGTI THGTPVNVQ KVLTESNRIS  
HHKILAIVGT AESNSEHPLG TAITKYCKQE LDTETLGTI DFQVVPGCGI  
SCKVTNIEGL LHKNWNIED NNIKNASLVQ IDASNEQSST SSSMIIDAQI  
SNALNAQQHK VLIGNREWMI RNGLVINNDV NDFMTEHERK GRTAVLVAVD  
DELCGLIAIA DTVKPEAELA IHILKSMGLE VVLM TDGDN SK TARSIASQVG  
ITKVFAEVLP SHKVA KVQL QEEGKRVAMV GDGINDSPAL AMANVGIAIG  
TGTDVAIEAA DVVLIRNDLL DVVASIDL SR KTVKRIRINF VFALIYNLVG  
IPIAAGVFMP IGLVLQPWMG SAAMAASSVS VVLSLFLKL YRKPTYESYE  
LPARSQIGQK SPSEISVHVG IDDTSRNSPK LG LLD RIVNY SRASINSLLS  
DKRSLSNVVT SEPDKHSLLV GDFREDDTA L

**Figure 3:**

ATP7A	MRKLSIRKRDNNLLKPSSASSLGIAVSLGRPVLSRSSSGIVNLLEEVGLHIRDATFSSTKLLEAISTVSAQVEELAVHNE
ATP7B	-----MPEQERQITAREGAS-----RKILSKSLPTR-----AWEFAMKKSEAFDNVGYEGG-----LD
Consensus/80%	.....b.cp-pplh..ptAS.....R.1LS+.S.sT.....hb-sAbpp*bhb-slh.tt.....-
ATP7A	CYDMSMGVNSVTISVEGMTCNSCVWITIEQQIGKVNGVHHTKVSLEEKNATIIXDYLQOTPCTLQEA/DDDMGFDAVITHNPD
ATP7B	GLGSSSQVATSVRILGTMICOSCVKSTEDRISNLKGIIISVSLQDSATVKXVSVVCLQQVCHQJGDMGFEASIA--
Consensus/80%	sbsPS..Vs*sTlplbGMTCpSCVb*I EppItplpGlpbKVSLEpcAt1bYsPpl.s.pplpc.I sDMGF-AsIh...
ATP7A	PLPVLTDTLFLTVTASLLPFDHIQSTLLTKGVTDIKIYPQKRTVAVTIIPSIVNANQIKELVPELSLDTGTLEKSGA
ATP7B	-----EKAAS-----E.Kttt
Consensus/80%	.....
ATP7A	CEDHSMAQAGEWVLMKMVEGMTCNSCSTLIEKGKICKLQGVQRIKVSLDNOEATIVYQOHLISVEEMKKQIEAMGPAPFK
ATP7B	WPSRSLP-AOEAVVKKRVEGMTCOSCVSSIEGKVRLOGVVRVKVSLSNQEAVITYQOXLQOPEDLRDHVNMDMGFFAAIK
Consensus/80%	h.s+Sbs.A.Esv1Kb+VEGMTCpSCSS*IEGK1.KLQGV.R1KVSLSNQEASISYQPAlpsE-b+cplpsMGF.Ah1K
ATP7A	KOPKYILKLAGDVERLKNT-----EVIKSSEGSSQRSPSYTNDS-----TATFIIDGMHCKSCVSNTESLAIQYVSSIVVS
ATP7B	SKVAPLISLGPIDIERIQLSINPKNLSANQFNNSETLGHQGSHVTLQLRIDGMHCKSCVLNIEENIGQLLGQVQSIQVS
Consensus/80%	pps..LplGsID1ERlpst....PlpStp.sbppS.*bsppt...ThpbIDGMHCKSCV.NIEpslt.LbhVpSI.VS
ATP7A	LENRSALVVKYNAASSVTESLRKATEAVS-GLYRVSITSEVEES--TSNSPSSSSLQKIDLNVVSQPLTOETVINIDGMTCN
ATP7B	LENKTAQVKYDPSCSTS/VALORATEALP.GNFVKSILPDGAEGSGTDHRSSSSHSGS.SPRNOVQGTCSTTLIAAGMTCA
Consensus/80%	LEN*+AbVKYssSss*P.tLp+aIEAlspG.a+vsIss.set..TspssSssP....P.p.sQshsppTlisisGMTCs
ATP7A	SCVQSLIEGVISKKPCVKSERVSLANSNGTVEYD.LLTS-ETIRGATEDMGFDATLSDTNEPLVVIQPPSSEMPLLTSTN-
ATP7B	SCVHSIEGMISOLEGVQOISVSLAEQTATVLYNSVISIEELRAATEDMGFEAVSVSESCSTNPILGNHSAGNSMVQITDG
Consensus/80%	SCVpSIEGhISpB.GVppIpVpVSLaptstTVbYsP.lhSPEpLrtAIEDMGF-A*1sspshs1tp.St..sb1*Ts.
ATP7A	-EFYTKGMTVODKEEGKNS-----SKCYIQTGMMTCASCVANIERNLRREEGIVSILVALMAGKAEVR
ATP7B	TPTSVQEVAHTGRLPANHADILAKSPQSTRAVAPQKCFQIKGMMTCASCVNTERNLQKEAGVL.SVLVALMAGKAEIK
Consensus/80%	.....hsPhps+b.tptt.....p.KCa1Q1pGMMTCASCVNCNIERNLS1VALMAGKAEI+
ATP7A	YNAVIQCPMTAEFTIREIGHGATVLENADEGDGVLLVVVRGMTCASCVKIESSLTKHGILYCSVALATKAHKYDCE
ATP7B	YDPEVIOLETAQFIQDIGHAAVMEDYAGSDGNITLITCFCASCVNTEESLIRTRNCITYASVALATSALKVFD
Consensus/80%	YSp.VIQP.b1ApFIP-LGF.AsvBeshs.tDGs1El1pGMMTCASCVhpIESPlt+pPG1hYsSVALATSKab1KaDPE
ATP7A	IIGPRDI1HTIESLGFESTLVKKDRSASHLDHKREIROWRRSFLVSLFFC1VMGLMTYMMVMDHHFATLHHHNQMSKEE
ATP7B	IIGPRDI1KLIBEIGFHASLAQRNPNAHLLDKMEIKQWKKSCLC1VEGIYMAIMIVMLIPSN-----
Consensus/80%	IIGPRDI1+hIEp1GfCASF1sp+s.sApHLDHkbeI+QW++SFLsLhFs1pVpMt1mHymbl.sp.....
ATP7A	MINLHSSMFLERQILGLSVMNLLSFLLCVVFQFFGGWYFYIQAQYKALKHKTANMDVLLVLATTAFAFAYSTILLVAMYE
ATP7B	--EPHQSMVLDHN1I1GLSILNLIIFLCTFQOLIGOWYFVQAQKSLIRHRSANMDVLLVATSAVYVSLVILWVVAAB
Consensus/80%	..p.HpSMhL-+p1lPGLS1bNLL.F1LCs.VQbbCGWYFYIQAQYKLL+H+*ANMDVLLVLAT*TaasYS11L1VahhE
ATP7A	RAKVNLTFFDTMLVFVIALGRWLHEIAGKTSSEALAKLISLOATEATIVTLDSDNILLSEEQVDVELVORGDI1KVV
ATP7B	KAERSVTFFDTMLVFVIALGRWLHEIAGKTSSEALAKLMSLOATEATVTLGEDDNLTIREEQVPMELVORGDI1KVV
Consensus/80%	+AC.SPLTFFDTPPMLVFVIALGRWLHEIAGKTSSEALAKLISLOATEATVTLspDN11pEEQVshELVORGDI1KVV
ATP7A	GGKFWDGRVTEGHSMVDESPLITGEAMVAKK-GSTVILAGSINONGSLLICATHVGADTTLSQ1VKLVEEAQTSKATIQ
ATP7B	GGKFWDGKVLEGNTMADESPLITGEAMVTKK-GSTVILAGSINAHGSVLIKATHVGNDTTLAQIVKLVEEAQMSKATIQ
Consensus/80%	PGGKFVFDG+V1EGp*MsDESPLITGEAMPVSKPGSTVIA.SIN.pGS11I1pATHVGsDTTLtQIVKLVEEAQhSKAPIQ
ATP7A	QFADKLSGYFYF1IVFVFSIATLLWVIVGFLNFEIVTYF.GYNSRISRTETIIRFAFOASITVLCIAC-CSLGLAT.TA
ATP7B	QLDRFRSGYFYF1IIMSTLTLVVIVGFLDGVOKKFNPNKHSITQTEVITSITVLCIAC-CSLGLAT.TA
Consensus/80%	QbAD+bSGYFVFF1lbhShTL1WVIVGFlsF.1VppYFPs.N+pISpTeIIRFAFOQSITVLCIACPCSLGLATPTA
ATP7A	VMVGIGVGAQNG1L1IKGG1LEMAHKVTVVVFDTKTTITHG1WVNQKV1TESNRISHHKLIAVGTAESENSEH.LGTA
ATP7B	VMVGTGVAAQNG1L1IKGG1LEMAHK1KTVMDFTKTTITHG1WVMRVLLLGDVATLPLRKVLAVVGTAESENSEH.LGVA
Consensus/80%	VMVGTGV1TAQNG1L1IKGGC1PLEMAHK1KSV1FDKTGTTIHGSP.V.pvb1Ls-ssplsb+K1LA1VGTAEtssHPLGSA
ATP7A	ITKYCRQELDTETLGTCDTFOVY1GOGISCKVNTIECL1HKNNNWNIEDNNNIKNASLVIQIDASNEQSTSSTSSMIIDQ1SNT
ATP7B	VTKYCRQELDTETLGYCDTFOAVY1GOGIGCKVSNVEGILAH-----ERPLSAPASHLNEAGSLPAEKDAVP--
Consensus/80%	1TKYCKpElstETLGHchDFQsVPGCGitCKV*N1EGLLh+s.....p.lphsASpbppsts.shbbda....
ATP7A	ALNAQQHKV11CNREWM1RNGLV1NNDVNDMTEHERKGRTA1VAVDDELCLG11IA1ADTVKPEAELA1H1LKSMSG1LEV
ATP7B	----QTFSYVLTGNREWR1RNGLT1SSDVSDAMTDHEMKQTA1V1AIDGVLCGM11A1ADVKOENALAVHTLQSMGVDDV
Consensus/80%	...QapV1GNREWBdRNGLs1ssDVsDhMT-HEBKGrTA1LVA1Ds.LCGb1IA1AdsvK.EA.LA1H1LpSMG1-VV
ATP7A	LMTGDNKSTARTASQVG1TKVFAEV1SHKVAKVQLQEEGKRVAMVGDGINDS1ALAMANVIA1GTVGDVA1EAADV
ATP7B	LITGDNKRTARATQVG1NKVFAEV1SHKVAKVQLQEEGKRVAMVGDGINDS1ALAOADMGV1A1GTVGDVA1EAADV
Consensus/80%	LbTGDNpKTARTIA*QVG1SKVFAEVLPSPHKVAKVppLQpcGK+VAMVGDG1NDSPALabAshG1A1GTVGDVA1EAADV
ATP7A	VLIRNDL1D1D1S1R1T1K1R11NF1P1L1Y1N1V1G11IAAGVFM1IGLV10WMGSAAMAASSVSVV1LSS1FLKLYR
ATP7B	VLIRNDL1D1D1V1V1S1R1T1K1R11NF1P1L1Y1N1V1G11IAAGVFM1IGLV10WMGSAAMAASSVSVV1LSS1FLKLYR
Consensus/80%	VLIRNDL1D1D1V1V1S1R1T1K1R11NF1P1L1Y1N1V1G11IAAGVFM1IGLV10WMGSAAMAASSVSVV1LSS1FLKLYR
ATP7A	KTYESYELPARSQTGQKSPSE1SVHVG1DDTSRN1KLG1LDRIVNYSRASINS1LSDKRS1NSVVTSEP-DKHS1LVG
ATP7B	KD1LERYEAQAHGHMKPLTASQVS1H1GMDDRWRS1RATPWQSVY1S1V1S1LTS1SDKPSRHSAADDGDKW1LL1N
Consensus/80%	KPsb1pYeh.A+tpb..b*sSp1SVH1GbDDp.RsSp1hs.bDpls.hSpss1sSlhSDK.SbpSssss-s.DKaSLL1s
ATP7A	DFREDDDTAL
ATP7B	GRDEEQYI--
Consensus/80%	sbcE-p.h..